

Serial No.: 10/715,888

AMENDMENTS TO THE CLAIMS:

1-10. (cancelled)

11. (previously presented) An image generation circuit, comprising:

a preprocessing portion operably coupled to receive primitive parameters, wherein the preprocessing portion produces pixel information from the primitive parameters based on the primitive parameters;

a pixel engine operably coupled to the preprocessing portion, wherein the pixel engine receives the pixel information, and calculates intermediate data from the pixel information; and

a memory operably coupled to the pixel engine, wherein the memory stores the intermediate data,

wherein the pixel engine reads the intermediate data from the memory and calculates a final data from the fed-back intermediate data.

12. (previously presented) A image processing circuit, comprising:

a preprocessing block that receives primitive parameters and produces pixel information from the primitive parameters;

a pixel engine operably coupled to the preprocessing block, wherein the pixel engine generates pixel values from the pixel information; and

a feedback path from an output portion of the pixel engine to an input portion of the pixel engine, wherein the feedback path allows results of operations performed by the pixel engine to be used in subsequent operations performed by the pixel engine.

Serial No.: 10/715,888

13. (previously presented) The image processing circuit of claim 12, wherein the feedback path includes buffering such that a plurality of pixels can be processed during each of a plurality of passes in a multipass operation, wherein each pass has associated information that is used to configure the image processing circuit.

14. (new) The image generation circuit of claim 11, wherein the intermediate data is one of texture data and shape data.

15. (new) The image generation circuit of claim 11, wherein the primitive parameters includes at least one of two-dimensional polygon vertex information, z information, and brightness information.

16. (new) The image generation circuit of claim 11, wherein the pixel information includes at least one of pixel coordinates, a z value, a brightness, and texture coordinates.

17. (new) The image generation circuit of claim 11, wherein the pixel information is determined by linear interpolation.

18. (new) The image generation circuit of claim 11, wherein:

a two-dimensional image is generated by texture mapping to three-dimensional polygons;
an overall pattern is generated on said polygons by mapping of basic textures; and
mapping of modulation textures by amplitude modulation is executed by amplitude modulation processing on patterns generated based on the mapping of said basic textures.

Serial No.: 10/715,888

19. (new) The image generation circuit of claim 18, wherein in said amplitude modulation processing, an amplitude is made smaller with increasing distance from the vicinity of a viewpoint.

20. (new) The image generation circuit of claim 18, wherein a repetition period of said basic textures and a repetition period of said modulation textures are offset from each other.

21. (new) The image generation circuit of claim 18, wherein said modulation textures are set to higher spatial frequencies than those of said basic textures, with color information removed from said basic textures.

22. (new) The image generation circuit of claim 18, wherein said modulation textures consist of different patterns from said basic textures.

23. (new) The image generation circuit of claim 11, wherein:

the image generation circuit generates a two-dimensional image by texture mapping to dimensional polygons;

the memory stores basic textures to be mapped to generate the overall pattern on a polygon.

the memory stores modulation textures used to amplitude-modulate the patterns generated by mapping of the basic textures; and

Serial No.: 10/715,888

amplitude modulation mapping of modulation textures is executed by amplitude modulation processing on the patterns generated based on mapping of the basic textures.

24. (new) The image generation circuit of claim 23, wherein in said amplitude modulation processing, the amplitude is made smaller with increasing distance from the vicinity of a viewpoint.

25. (new) The image generation circuit of claim 23, wherein a repetition period of said basic textures and a repetition period of said modulation textures are offset from each other.

26. (new) The image generation circuit of claim 23, wherein said modulation textures are set to higher spatial frequencies than those of said basic textures, with color information removed from said basic textures.

27. (new) The image generation circuit of claim 23, wherein said modulation textures consist of different patterns from said basic textures.